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## arameter costs help compare buildings

rameter costs are more meaningful sasures for comparing building costs an total square foot or cube costs.

The latter are generally misleading en used for cost comparisons. None these cost comparison tools is souple, however, that it adjusts for differences in building shapes, finishes, or usual foundation conditions.

The parameter cost system is superior cause it relates the cost of each stanrd trade to the physical measure arameter) of the building that is the ief determinant of that trade.

The table below provides parameter

hick: 2' 11" around first floor; 5' 10" next four; 6' 9" top band.

costs and the percentage breakdown of where the building dollar went for three buildings completed between December, 1969, and March, 1970.

The court house in Port Washington, Wis., and the Atlanta office building demonstrate how parameter costs disclose big differentials, which may reflect the owner's preference or unusual costs. The office had 50% more air conditioning tonnage, but lower heating requirements, yet its HVAC cost half as much per square foot of finished area. It had more plumbing fixtures, yet the owner spent half as much for plumb-

ing. By contrast, the owner spent much more for its curtain wall (precast concrete) and glass than the court house.

Building costs reported here are supplied to ENR by leading contractors, all members of ENR's 400 largest contractors in 1969: Holder Construction Co., Atlanta, Joseph P. Jansen Co., Milwaukee, and Leonard Shaffer Associates, Philadelphia.

Previous building parameter cost reports appeared in the ENR cost reports for 12/15/66, 3/16/67, 6/20/68, 12/19/68, 3/20/69, 6/19/69, 9/18/69 and 3/19/70.

| pe of building  |            | Port V<br>Oo                        | Court house<br>Vashington, V<br>It '68/Jan '70<br>Public<br>Rein conc.<br>nry curtain w<br>4 hr. |                            | Warehouse and office Philadelphia, Pa. Jun '69/Doc '69 Private Struc. steel/metal deck/rcin conc. Brick/block load bear n.a. |                                |                           |                       |                             |                    |                | Office Atlanta, Ga. July '69/Mar '70 Private Precast prestressed conc. Precast conc and glass AAA |                                |                             |                        |  |
|---|------------|-------------------------------------|--|----------------------------|--|--------------------------------|---------------------------|-----------------------|-----------------------------|--------------------|----------------|---|--------------------------------|-----------------------------|------------------------|--|
| a rating R MEASURES:  |            |                                     | 4<br>5<br>13,843 sf  |                            |  |                                |                           | 1                     |                             | ٠.                 |                |   | 5<br>5<br>19,453               |                             |                        |  |
| Basement plan area Basement area, total No. of basement floors Gross area supported (excl slab on |            |                                     | 13,843 sf<br>1   | •                          |  |                                |                           | 0                     |                             |                    |                |   | 77,800 sf                      | •                           |                        |  |
| grade)  Face brick area Interior partitions Curtain wall, inci glass                              |            | 55,372 sf<br>5,492 lf               |  |                            |  | Ξ                              |                           |                       |                             |                    |                | 6.720 If  |                                |                             |                        |  |
| Curtain wall, inci glass Net finished area Other exterior masonry wall                            |            | 26,034 sf<br>69,215 sf<br>26,034 sf |  |                            |  | 25,.000 sf                     |                           |                       |                             |                    |                | 36,502 sf<br>97,253 sf<br>2   |                                |                             |                        |  |
| Number of elevators   |            | <u>.</u>                            |  |                            |  | · <u>•</u> .                   |                           |                       |                             |                    |                | 13 lf<br>. 81   |                                |                             |                        |  |
| toliets)  |            | open paved 13,000 sf                |  |                            |  | open paved, 16,182 sf, 22 cars |                           |                       |                             |                    |                | open, paved, 152,200 sf   |                                |                             |                        |  |
| THER MEASURES:  ory height, typical floor  bby area   |            |                                     | 13 ft 4 In<br>382 sf   | -                          |  |                                | central elec              | 22 ft<br>etric. Inter | ior feed                    | ·                  | 325            | ton, ce   | 1 <u>2</u> ft<br>ntral electri | c, interior fe              | ed                     |  |
| r conditioning of rooms   | 211 to     | on, cent                            | tral electric, li  | nterior reed               |  |                                | Contrar cici              |                       |                             |                    |                |   |                                | Total C                     |                        |  |
| RADE CO.  | de l       | neter Co<br>Unit                    | Cost   | Total C                    | %  | Code 9                         | arameter Co<br>Unit<br>sf | ost:<br>Cost<br>1.35  | Total C<br>Amount<br>33,870 | Cost:<br>%<br>13.7 | Code<br>5      | ameter<br>Unit<br>sf  | Costr<br>Cost<br>1.85          | Amount<br>144,016           | 9,6                    |  |
| neral conditions and fee  ze work (clearing, drainage)  | 5<br>—     | sf<br>—                             | 3.61   | 199,699<br>48,872<br>0     | 11.1<br>2.7<br>0   | =                              | =                         | Ξ                     | . 0                         | 0                  |                |   |                                | 10,698<br>14,588<br>4,863   | 0.7<br>1.0<br>0.3      |  |
| lilties (water, sowerage, electric, gas) mads, walks  | <b>-</b> , | =                                   | =  | 2,091<br>0                 | 0.1  | =                              | =                         | _ =                   | 3,600                       | 1.5                | -              | · <del>_</del>  | 0.15                           | 2,917                       | 0.2                    |  |
| cavation  | 3          | sf<br>—                             | Ξ  | . 0                        | 0  | 9                              | <b>sf</b>                 | 0.42                  | 10,500                      | 4.2                | 3              | sf<br>sf  | 1.38                           | 0<br>26,794                 | 0<br>1.8               |  |
| issons, pilings   | _<br>5     | sf                                  | 3.86   | 0<br>213,569               | 0<br>11.9  | 9                              | sf                        | 1.33                  | 0<br>33,366<br>35,955       | 0<br>13.5<br>14.5  | 5              | sf  | 3.70                           | 28 <b>7,8</b> 73e<br>4,863b | 19.2<br>0.3            |  |
| Region masonry  | 0<br>7     | sf<br>If                            | 2.40<br>7.37   | 62,603<br>40,466           | 3.5<br>2.3   | =                              | =                         | Ξ                     | {35,955                     | 14.5               | Ξ.             | _   | , =                            | 0                           | 0                      |  |
| one, granite, marble  | 0          | sf<br>—                             | 4,29   | 111,785                    | 6.2  | 9                              | sf                        | 1.25                  | 31,224                      | 12.6               |                | flr   | 3,696                          | 0<br>1 <b>8,4</b> 78        | 1,2                    |  |
| rnamental metal   | 2          | fir                                 | 6,521  | 32,605                     | 1.8<br>5.7   | Ξ                              | Ξ                         |                       | 2,800                       | ŏ<br>1.1           | - <del>-</del> | If '  | 6.82                           | 45,848                      | 3.1                    |  |
| mrpentryaterproofing and dampproofing   | 8          | sf<br>sf                            | 18.74<br>0.28  | 102,947<br>7,302<br>25,124 | 0.4<br>1.4   | - 9                            | sf                        | 0.57                  | 0<br>14,360                 | 5.8                | 3              | sf  | 1.20                           | 0<br>23,341                 | 0<br>1.6               |  |
| etal doors and frames   | 2          | sf<br>fir ,                         | 1.81<br>2,560.60<br>0.63   | 12,803<br>16,400           | 0.7  | i                              | =                         | =                     | 1,495<br>4,100              | 0.6<br>1.7         | 2              | <u>f1</u>   | 1,186                          | 5,928<br>0                  | 0.4                    |  |
| etal windows  | -          | sf<br>fir                           | 3,975.20   | 19,400<br>0<br>19,876      | 0.5  | _                              | —<br>fir                  | 950                   | 950                         | 0.4                | 2              | fi  | 4,978                          | 24,890<br>7,915             | 1.7<br>0.5             |  |
| ardware   | 8          | sf                                  | 0.60   | 15,745                     | 0.9  | · Ξ                            | =                         | =                     | 0                           | 0                  | 12             | sf<br>If  | 2.32<br>141.92                 | 84,873<br>1,845             | 5.7<br>0.1             |  |
| Store front and lobby only urtain wail  | 8          | sf<br>sf                            | 1.09   | 28,252<br>33,616           | 1.6<br>1.9   | <u>,</u> _                     | <u> </u>                  | =                     | 0                           | 0                  | <u>8</u>       | sf<br>  | 1.94                           | 70,995f<br>2,918            | 4.7<br>0.2             |  |
| rywall '  | <u>-</u>   | fixt                                | 299.10   | 20,638                     | 1.1  | =                              | =                         | Ξ                     | 2,453<br>881                | 1.0<br>0.4         | 7<br>13        | if<br>fixt  | 8.10<br>80.04                  | 54,413<br>4,863             | 3.6<br>0.3<br><b>0</b> |  |
| Ble work1  Errazzo  | 9          | sf<br>sf                            | 0.44   | 30,701<br>18,005           | 1.7<br>1.0   | 9                              | sf                        | 0.04                  | 1,081                       | 0.4                | 9              | sf  | 0.33                           | 32,094<br>27,000            | 2.1<br>1.8             |  |
| coustical celling   | 9          | sf                                  | 0.60   | {41,331                    | 2.3  | 9                              | <u>5f</u>                 | 0.04                  | 1,082<br>0                  | 0.4                | 9 .            | sf<br>—<br>sf   | 0.28                           | 22,392                      | 1,5                    |  |
| ollet partitions  | 7          | sf<br>flxt                          | 0.41<br>17.49  | 28,611<br>1,207            | 1.6<br>0.1   | 9                              | <u>sf</u>                 | 0.13                  | 3,170<br>440                | 1.3<br>0.2         | 13             | fixt  | 31.85                          | 2,580                       | 0,2                    |  |
| mecial waste treatment facilities   | <u> </u>   | =                                   | =  | 0                          | 0  | =                              | =                         | Ξ                     | 0                           | 0                  | =              | Ξ   | Ξ                              | 14,102<br>13,129d           | 0.9                    |  |
| -peolal equipment   | 2          | fir                                 | 15,094   | 14,505<br>75,470           | 0.8<br>4.2   | Ĕ                              | _                         | 1,18                  | . 0<br>29,500a              | ŏ                  | 2<br>13        | fir<br>fixt   | 12,643<br>630.35               | 63,215<br>51,058            | 4.2<br>3.4             |  |
| levators  | 13         | fixt<br>—                           | 1,522.94   | 105,083                    | 5,8<br>0   | 9                              | <u>sf</u>                 | _                     | 10,100                      | 4.1                | 9              | sf  | 2.18                           | 212,000                     | 0<br>14.2              |  |
| lectrical: contracts  | 9          | sf<br>sf                            | <b>4.15</b><br><b>2.6</b> 0  | 286,937<br>179,853         | 16.0<br>10.0   | } 9                            | sf                        | 0.66                  | 16,468                      | 6.7                | 9<br>9         | sf<br>sf  | 0.90<br>0.81                   | 87,302<br>79,000            | 5.8<br>5.3<br>0        |  |
| arking, outside enclosed  | 9 .        | sf -                                | 0.30   | 20,713                     | 1.2<br>0<br>0  | 14                             | sf<br>st                  | 0.21                  | `5,177<br>0<br>4,675        | 2.1<br>0<br>1.9    | <u></u><br>14  |   | 0.27                           | 0<br>40,973                 | 0<br>2.7               |  |
| open, paved   | 9 Ap       | prov                                | ved²F&r  | Refers                     | e020   | 02/0                           | 05/09:                    | CľAº-F                | 2DP86-                      | 0024               | 14R00          | 030   | 002002                         | 26-4 <sup>6,725</sup>       | 100.0                  |  |
| a Incl. HVAC • b penthouse • c by c   | owner      | • d inci                            | i. hoisting • o  | includes pr                | ecast co   | ncrete                         | costing \$2               | 08,121 an             | d concrete a                | arch cos           | ting \$79      | ,747 ●  | f six precas                   | t concrete ba               | nus, 4 in              |  |